

Terms

The terms will be used to refer to:

- df = Pandas DataFrame
- series = Pandas Series
- data = Pandas DataFrame or Series

Plot with Series and DataFrames

- `series.plot()` Series
- `dataframe.plot(x='None', y='None')` DataFrame
- `data.plot.<kind>()` Another method
- 'bar' or 'barh', Kinds
- 'hist', 'box', 'kde' or 'density',
- 'hexbin', 'pie' and 'scatter'

Bar Plot

- `data.plot.bar()` Bar plot/
`/.barh()` Horizontal plot
- `data.plot.bar(stacked=True)` Stacked bar plot

Area Plots

- `data.plot.area()` Area plot
- `data.plot.area(stacked=False)` Non-Stacked area plot

Pie plot

- `series.plot.pie()` Pie plot for Series
- `DataFrame.plot.pie(subplots=True)` Pie plot for DataFrame
- `series.plot.pie(labels=['A','B','C'], colors=['r','b','g'], autopct='%2f')` Wedge labels

It's valid:

fontsize and figsize

Scatter plot

- `DataFrame.plot.scatter(x=' ', y=' ')` Scatter plot
- `ax= df.plot.scatter(x='A',y='B', color='None', label='Group1')`
- `df.plot.scatter(x='C', y='D', color='Other', label='Group2', ax= ax)` Multiple plot

Histograms

- `data.plot.hist()` Histogram plot
- `data.plot.hist(stacked=True, bins=10)` Stacked and bins size
- `data.plot.hist(orientation='horizontal', cumulative=True)` Horizontal and cumulative
- `data.diff().hist(color='g', alpha=0.5)` Subplots histograms

Box Plots

- `data.plot.box()` Box plot
- `dict={'boxes':'', 'whiskers':'', 'medians':'', 'caps':''}` Color of Boxes
- `data.plot.box(color=dict)`
- `data.plot.box(vert=False)` Horizontal box plot
- `df.boxplot(by='column')`
- `df.boxplot(column=['', ''], by=['', ''])` Groupings
- `df.groupby('g').boxplot()` for random choice

The "choice random" is:

- `g=np.random.choice(['A', 'B'], size=50)`

Hexagonal bin plot

- `DataFrame.plot.hexbin(x='None', y='None')` Hexagonal bin plot
- `DataFrame.plot.hexbin(x='None', y='None', C='z', reduce_C_function=np.max)` add column 'z' for the value
- `DataFrame.plot.hexbin(x='None', y='None', gridsize=20)` Gridsize

Density plot

- `data.plot.kde()` Density plot

Plot for data .CSV

- > `data= pd.read_csv('Name or direction of data')`
- Andrews curves
- `pdt.andrews_curves(data, 'column name with class names')`
- Parallel coordinates
- `pdt.parallel_coordinates(data, 'column name with class names')`
- RadViz
- `pdt.radviz(data, 'column name with class name')`

Plotting Tools from Pandas Plotting

- > `import pandas.plotting as pdt`
- Scatter matrix plot
- `pdt.scatter_matrix('frame', 'alpha= 0.5', 'figsize=(6,6)')`
- Lag plot
- `pdt.lag_plot(series)`
- Autocorrelation plot
- `pdt.autocorrelation_plot(series)`
- Bootstrap plot
- `pdt.bootstrap_plot(series, size= 50, samples= 500, color='green')`



Plot formatting

Plot style

```
- series.plot(style='k--')
```

Controlling the legend

```
- DataFrame.plot(legend= False)
```

Color map

```
- DataFrame.plot(colormap='')
```

Scales (logarithmic)

```
- data.plot(logy= True) or logx  
or loglog
```

Plotting on a secondary y-axis

```
- DataFrame.column1.plot()  
- DataFrame.column2.plot(secondary_y=True)
```

Suppressing tick resolution adjustment

```
- data.plot(x_compat= True)
```

Subplots

```
- data.plot(subplots= True) Subplots
```

```
- data.plot(subplots= True, layout= (2,3) Multiple axes
```

It's valid:

`figsize` and `sharex`

Plotting with errors bars

```
DataFrame.plot.bar(yerr=df_err,  
xerr= df1_err, capsize=3)
```

`df_err` and `df1_err` are DataFrame of the errors of X and Y

Plotting tables

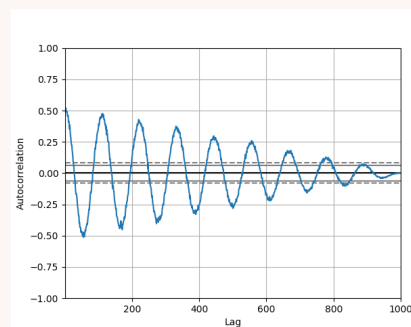
```
- ax.get_xaxis().set_visible(False)
```

```
- DataFrame.plot(table= True,  
ax=ax)
```

Adds table to:

```
- fig, ax= plt.subplots(1,1)  
- pdt.table(ax, DataFrame,  
loc='upper right', colWidths=  
[0.2, 0.2, 0.2])  
- DataFrame.plot(ax= ax)
```

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